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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/568,359	03/27/2006	Christian Heichel		2705

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EXAMINER	
JOHNSON, PHILLIP A	

ART UNIT	PAPER NUMBER
3656	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/568,359	HEICHEL ET AL.	
	Examiner	Art Unit	
	PHILLIP JOHNSON	3656	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *13 February 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *11-23* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *11-23* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *13 February 2006* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Drawings

The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the following features must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

- (claim 15) each said running face of each said beating bush has a grooved depression in a radial direction lying against a respective said bearing bush.
- (claims 18 and 20) said at least one grooved depression in said azimuth direction has a length that joins openings of at least two said channels and, upon rotation, remains in connection with at least one channel of said at least two said channels.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering

of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Objections

Claims 17 – 20 are objected to because of the following informalities: the term "azimuthal" or "azimthal" should be change to - - azimuth - -. Appropriate correction is required.

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 11 – 23 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Specifically, claim 11 is written in generally narrative form making it unclear which elements/steps are being positively recited and which should be given patentable weight. The examiner suggests rewriting the claims in accordance with 37 CFR 1.75(i) so as to make clear what elements/steps are being positively recited and what should be given patentable weight. As written the claims are unclear and indefinite.

Claim 12 recites the limitation "channels" in line 3. It is unclear this limitation is the same as the "at least two channels" recited in the antecedent claim 11, or if it sets forth new structure.

Claims 15 and 16 recite the limitation "a respective said bearing bush" in line 3. There is insufficient antecedent basis for this limitation in the claim, as it is not clear if the applicant is referring to the "said bearing bush" in line 2," or a different bearing bush not properly set forth in the antecedent claims.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. **Claims 11 and 12, as best understood, are rejected under 35 U.S.C. 102(b) as being anticipated by Hall (USP 3,343,893).** Hall discloses (see Fig. 1) all the limitations of a similar device comprising:

- A bearing flange (not shown, but inherent to figure).
- A bearing journal (not shown, but inherent to figure).
- A bearing bush (10).
- Each said bearing bush having at least two channels (18) extending in a radial direction.

- On at least one end of each said bearing bush is a grooved depression (*annular depression located at either end of the bearing has an depth that extends in the radial direction*) extending in said radial direction
- A surface of said bearing journal surrounded by each said bearing bush, or said shaft, having at least one grooved depression (41).
- (Claim 12) each said bearing bush has eight channels running in said radial direction.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. **Claims 11 – 22, as best understood, are rejected under 35 U.S.C. 103(a) as being unpatentable over Titus (USP 6,929,402) in view of Golten (USP 2,937,908).**

Titus discloses (see Fig. 3) all of the limitations of a similar device comprising:

- A bearing flange (40).
- A bearing journal (18 in Fig. 1).
- A bearing bush (44).
- Each said bearing bush having at least two channels (66) extending in a radial direction.

- On at least one end of each said bearing bush is a grooved depression (76) extending in said radial direction

Titus fails to disclose a surface of said bearing journal surrounded by each said bearing bush, or said shaft, having at least one grooved depression.

Golten teaches (see Fig. 6) a surface of a journal or shaft (50) having at least one grooved depression (56 or 57) as a more reliable means in comparison to grooved bushings to distribute oil within the bearing area (col. 1, lines 36 – 44).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the device of Titus, such that a surface of said bearing journal surrounded by each said bearing bush, or said shaft, has at least one grooved depression, as taught by Golten, for the purpose of providing a more reliable means in comparison to grooved bushings to distribute oil within the bearing area.

Re claim 13, the combination of Titus and Golten discloses (Titus, Fig. 2) each said bearing bush having, on an outer side that is surrounded by said bearing flange, a surrounding grooved depression (44c) and channels (66) leading in a radial direction toward an inner side of each said bearing bush proceeding from the surrounding grooved depression.

Re claim 14, the combination of Titus and Golten discloses (see Titus, Fig. 2) each said bearing bush has at least one end face which is a running face (axial surface of flange portion 50).

Re claim 15, the combination of Titus and Golten discloses (see Titus, Fig. 2) each said bearing bush has a grooved depression (76) in a radial direction lying against a respective said bearing bush (52).

Re claim 16, the combination of Titus and Golten discloses (see Titus, Fig. 2) each said running face of each said bearing bush has a grooved depression in an axial running face (axial surface of flange portion 50) lying against a respective said bearing bush.

Re claim 17, the combination of Titus and Golten discloses (see Golten, Fig. 6) a surface surrounded by said beating bush of each said bearing journal has at least one grooved depression (56) in an *azimuth* direction or at least one grooved depression (57) in an axial direction.

Re claim 18, the combination of Titus and Golten discloses (see Golten, Fig. 6)said at least one grooved depression (56) in said *azimuth* direction has a length that joins openings of at least two said channels and, upon rotation, remains in connection with at least one channel of said at least two said channels.

Re claim 19, the combination of Titus and Golten discloses (see Golten, Fig. 6) a surface surrounded by said bearing bush of each shaft (50) of said shafts has at least one grooved depression (56) in an *azimuth* direction or at least one grooved depression (57) in an axial direction.

Re claim 20, the combination of Titus and Golten discloses (see Golten, Fig. 6) said at least one grooved depression (56) in said *azimuth* direction has a length that

joins openings of at least two said channels and, upon rotation, remains in connection with at least one channel of said at least two said channels.

Re claim 21, the combination of Titus and Golten discloses (see Golten, Fig. 6) a surface surrounded by said bearing bush of each said bearing journal (50) comprises at least one grooved depression (56) extending in an axial direction and ending blindly at both ends.

Re claim 22, the combination of Titus and Golten fails to disclose, between a respective said bearing journal and a respective said bearing bush, a play of approximately one-thousandth to three-thousandths of a diameter of said respective said bearing journal.

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the device of Titus and Golten in include, between a respective said bearing journal and a respective said bearing bush, a play of approximately one-thousandth to three-thousandths of a diameter of said respective said bearing journal, since it has been held that discovering optimum value or a result effective variable involves only routine skill in the art.

7. **Claim 23 is rejected under 35 U.S.C. 103(a) as being unpatentable over Titus in view of Golten and in further view of Ohia et al. (Ohia, USP 6,933,054).** The combination of Titus and Golten discloses all of the limitations set forth in claim 11, but fails to disclose that each said bearing bush is made of a copper/aluminum alloy.

Ohia teaches the use of copper/aluminum alloy as a wear-resistance capable material used in slide bearings.

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the device of Titus and Ohia, such that each said bearing is made of a copper/aluminum alloy, as taught by Ohia, for the purpose of providing wear-resistant capable slide bearings.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to PHILLIP JOHNSON whose telephone number is (571)270-5216. The examiner can normally be reached on MON - FRI, 7:30 AM - 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Ridley can be reached on (571) 272-6917. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Phillip Johnson/
Examiner, Art Unit 3656

/Richard WL Ridley/
Supervisory Patent Examiner, Art Unit 3656